

Project Fact Sheet

Improving Energy Recovery at The Geysers Geothermal Field by Delineation of In-Situ Saturation

GOALS

- To infer fluid saturation at The Geysers in past and present
- To refine understanding of saturation and flow patterns
- To make these data available to aid in designing an effective strategy for future water injection programs, to prolong the life of the resource



PROJECT DESCRIPTION

The Geysers Geothermal field, the world's largest, represents approximately 5% of California's electrical power generation, and is also the nation's largest source of renewable energy. The Geysers field has experienced declining output as the reservoir matures and is exploited, but recent wastewater injection activities have given new life to it. The ultimate energy output and the strategy for locating future water injection sites would be enhanced if improved methods were available for determining the

distribution and flow characteristics of underground fluids. This project uses three related approaches to address the problem of determining the in-place fluid saturations at The Geysers: (1) making laboratory measurements of saturation in rock cores from The Geysers; (2) collecting historical field data to use in inferring saturation from model matching; and (3) applying theory and models to estimate saturation from output characteristics.



BENEFITS TO CALIFORNIA

Knowing the initial and current saturations at The Geysers will allow for more effective recovery of the energy in the resource and the development of the best strategy to prolong the life of the resource. It will aid in developing an overall more efficient strategy in determining where and how to engineer future large and small scale injection programs.

FUNDING AMOUNT

Commission	\$258,781
Match	\$66,780
Total	\$325,561

PROJECT STATUS

Ongoing.

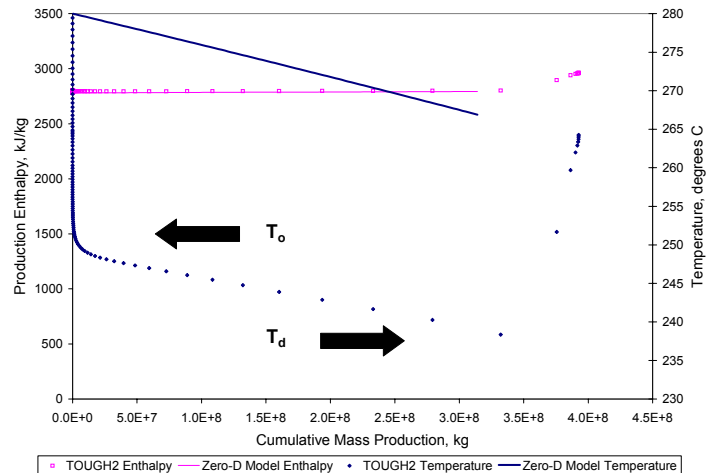


Figure 1: Production enthalpy and production temperature profiles: $s_{wi} = 0.3$; $s_{wp} = 0.3$. showing the evolution of well

FOR MORE INFORMATION

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